

A13 Co-ordinate Geometry Questions O Level P2

1 The points A , B and C are $(9, 8)$, $(12, 4)$ and $(4, -2)$ respectively.

(a) Find

(i) the gradient of the line through A and B , [1]

(ii) the equation of the line through C which is parallel to AB . [2]

(b) Calculate the length of the line segment

(i) AB , [1]

(ii) BC . [1]

(c) Show that AB is perpendicular to BC . [1]

(d) Calculate the area of triangle ABC . [1]

- 2 (a) A is the point $(3, 6)$ and B is the point $(11, 12)$.

Find the coordinates of the midpoint of AB .

Answer $(\dots\dots\dots, \dots\dots\dots)$ [1]

- (b) C and D have coordinates $(10, 15)$ and $(-8, -21)$.

- (i) Find the equation of the line CD in the form $y = mx + c$.

Answer $y = \dots\dots\dots$ [2]

- (ii) Does the point $(-2, -9)$ lie on the line CD ?
Show your working to justify your answer.

[1]

(c) The line l has equation $4y = 3x + 15$.

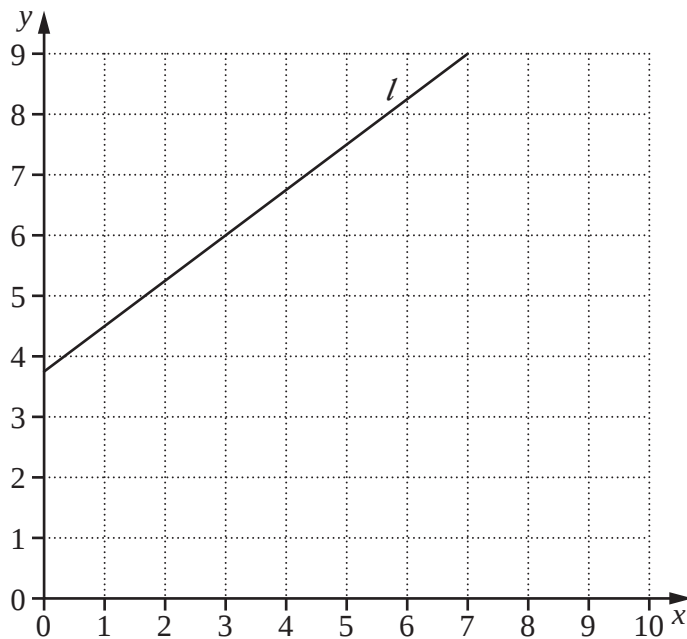
(i) (a) Find the coordinates of the point where l crosses the x axis.

Answer (.....,) [1]

(b) Find the coordinates of the point where l intersects the line $y = p$.
Express each coordinate in terms of p .

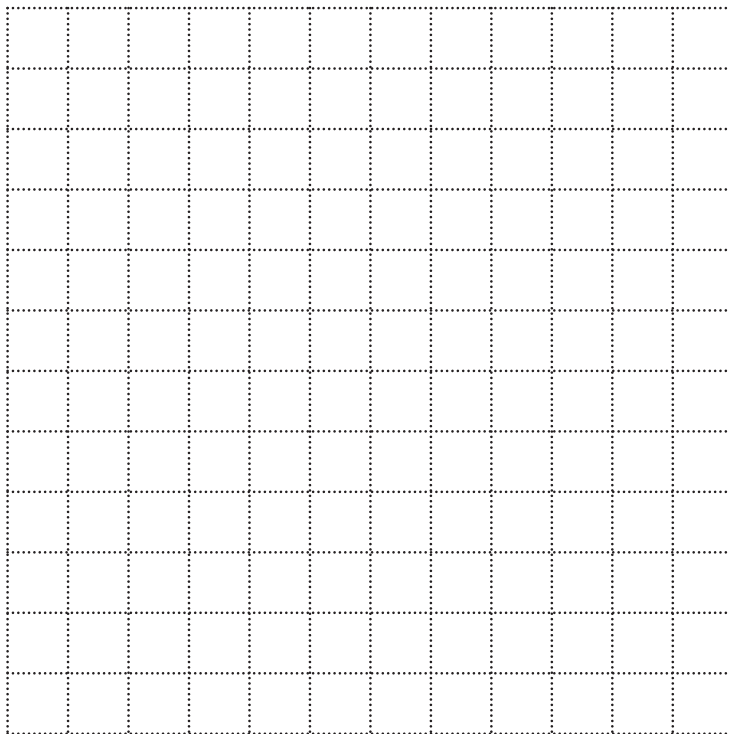
Answer (.....,) [2]

(ii) The line l is drawn on the grid below.



By drawing the line $3x + 2y = 30$ on the grid, find the coordinates of the point where these two lines intersect.

Answer (.....,) [2]



Q is the point $(-1, 2)$, R is the point $(3, 10)$ and S is the point $(-4, 2)$.

(a) Calculate the length of QR .

Answerunits [2]

(b) Calculate the value of $\cos \hat{SQR}$.

Answer [2]

(c) A point $P(x, y)$ is such that $PQ = PR$.

(i) Show that $x + 2y = 13$.

[2]

(ii) P is on the line $y = 7$.

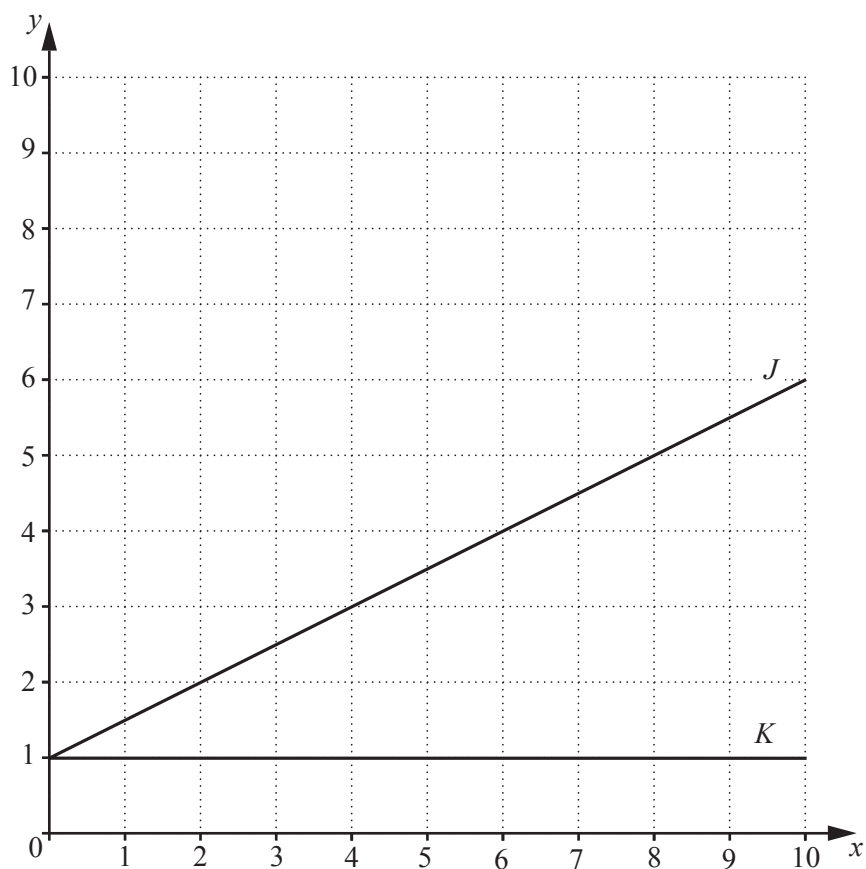
Find the coordinates of P .

Answer (.....,) [1]

4 (a) Simplify $\frac{4x-1}{3} + \frac{3x+5}{2}$.

Answer [2]

(b)



(i) Find the gradient of line J.

Answer [1]

(ii) Write down the equation of line K.

Answer [1]

- (iii) Draw a line, L , through $(6, 1)$ such that the area enclosed between J , K and L is 6 cm^2 .

[1]

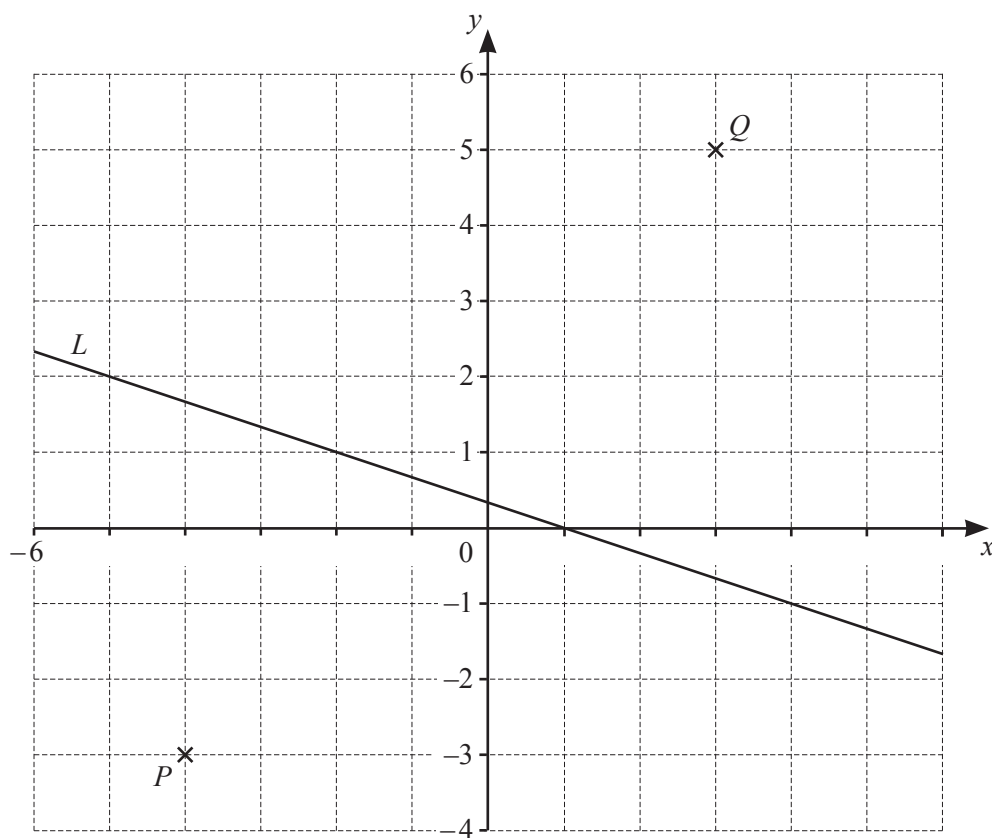
- (iv) Find the equation of line L .

Answer [2]

- (v) The line N is perpendicular to line J at $(2, 2)$.

Find the coordinates of the point where line N crosses the y -axis.

Answer [2]



Points P and Q and the line L are shown on the grid.

(a) Calculate the length of PQ .

..... cm [2]

(b) Show that the equation of line L is $3y + x = 1$.

- (c) Line M is perpendicular to line L and passes through point P .

Find the equation of line M .

Give your answer in the form $y = mx + c$.

$y = \dots\dots\dots$ [3]